

BOOKS

An Introduction to Chemical Engineering, C. E. Littlejohn and G. F. Meenaghan Reinhold Publishing Corporation, New York (1959). 271 pages. \$6.50.

Of the worthwhile texts available for first courses in chemical engineering, "An Introduction to Chemical Engineering" merits a place by performing the service of living up to its title—the student is introduced to the various facets of the profession of chemical engineering. The authors have kept in mind that there are many questions confronting chemical engineering students in dealing with the nature of the profession itself. These questions have as much to do with such topics as what does a chemical engineer do, as they do with the theories and computations which the student will meet in the years of his engineering career. As is pointed out, "... all too often persons enter an academic curriculum with only the haziest of notions as to their interest, the demands of the discipline, and what professionalism is." From the first two chapters in this book, entitled "The Profession of Engineering" and "Sources of Information in Chemical Engineering," the student should develop from the beginning a correct idea of what the profession of chemical engineering is, what it works on, and what it works with.

The logical extension of the first part of the text is to turn to matters more technical, and this is accomplished from simple graphical representation methods at the beginning to combined material and energy balances at the end. Among the material in the text which serves to convey the student between the aforementioned points are sections entitled "Process Variables," " P - V - T Relations for Gases," "Mixtures of Vapors and Gases," "Material Balances," "Energy Balances," and "Equilibria in Chemical Systems." Among these topics there are several which deserve special mention. The difference between force and mass is clearly defined early in the text, and the proper use of these terms is retained throughout, as mentioned in a pointed footnote. The ideal-gas concept is well presented, and the authors have introduced material on equations of state and compressibility factors in such a manner that the student should obtain an idea as to the uses of the various P - V - T computation methods and their relationships to each other. Useful concepts for energy balances, such as enthalpy and specific heat, are developed from basic thermodynamic relationships before use of them is made in the text. Unfortunately correspondingly complete derivations of the over-all energy balance and the phase rule are not included. The material dealing with equilibria includes introductory material on reaction kinetics and chemical equilibria, as well as a discussion of phase equilibria in binary and ternary systems. Problems are included at the end of each chapter.

In general the text is to be recommended, for it attains the stated goal of introducing the student to chemical engineering.

JOHN B. BUTT

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